Claims

1. A method of making a floor mat with a tufted pile textile surface and an elastomer backing, the method including mixing elastomer crumbs and a binder, depositing the crumb/binder mixture in a layer, placing a textile surface element that includes tufts of yarn tufted into a tufting substrate on the layer to form a mat assembly, and pressing the mat assembly in a heated press having an inflatable diaphragm while setting the binder, so that the elastomer crumbs are consolidated to form an elastomer backing that includes voids between the elastomer crumbs, and the textile surface element is bonded to the elastomer backing, wherein the mat assembly is pressed at a pressure in the range 2-8 psig (14-55 kPa) and at a maximum temperature of up to 200°C, to form a backing with a density in the range 0.5 to 0.9g /cm^3.

2. A method according to claim 1, wherein the mat assembly is pressed such that the thickness of the elastomer backing is in the range 60-100%, preferably 65-80%, of the thickness of the unpressed crumb/binder layer.

3. A method according to any one of the preceding claims, wherein the mat assembly is pressed at a maximum temperature in the range 110°C to 140°C, and most preferably approximately 125°C.

4. A method according to any one of the preceding claims, wherein the mat assembly is pressed in a plurality of stages including a low temperature stage and a higher temperature stage.

5. A method according to claim 4, wherein the binder is selected from the group comprising thermosetting and water curable polymeric materials and mixtures thereof, and the mat assembly is pressed in a plurality of stages including at least one low temperature stage followed by at least one higher temperature stage.

6. A method according to claim 4, wherein the binder is selected from the group comprising thermoplastic polymeric materials, hot melt binders and mixtures thereof, and the mat assembly is pressed in a plurality of stages including at least one high temperature stage followed by at least one lower temperature stage.

7. A method according to any preceding claim, wherein the press includes a plurality of zones, including a low temperature zone and a higher temperature zone.

8. A method according to claim 7, wherein the mat assembly is transported through the press in a plurality of steps, so that it is pressed sequentially in each of the plurality of zones.

9. A method according to any one of the preceding claims, wherein the mat assembly is transported through the press on a conveyor.

10. A method according to claim 9, wherein the crumb/binder mixture is deposited on the conveyor using a spreader device that moves at a constant speed relative to the conveyor.

11. A method according to claim 10, wherein the spreader device includes a vibrating doctor blade.

12. A method according to any one of the preceding claims, wherein a continuous textile element is laid on the crumb/binder layer.

13. A method according to any one of claims 1 to 11, wherein separate textile elements are laid consecutively on the crumb/binder layer.

14. A method according to any one of the preceding claims, wherein mat borders are produced by spreading the crumb/binder mixture over a larger area than the textile element or elements.

15. A method according to any one of the preceding claims, wherein the elastomer crumb is crumbed vulcanised rubber, preferably nitrile rubber.

16. A method according to any preceding claim, wherein that the elastomer backing has a bulk density in the range 45 to 70%, preferably 55 to 70%, of the solid density of the elastomer crumb material.

17. A method according to any preceding claim, wherein the backing has a density in the range 0.7 to 0.9g /cm^3.

18. A method according to any preceding claim in which the backing has a thickness of at least 1 mm.

19. A method according to any preceding claim in which the crumb size is less than 5 mm diameter and is preferably substantially in the range 2 to 4 mm.

20. A method according to any preceding claim in which the crumb/binder mixture includes at least 10% by weight powdered elastomer crumb.

21. A method according to any preceding claim in which the crumb/binder mixture includes from 2 to 20% by weight of binder.

22. A method according to claim 21, in which the crumb/binder mixture includes less than 1% by weight powdered elastomer crumb and from 2 to 12% of binder.

23. A method according to claim 22, wherein the crumb/binder mixture includes at least 10% by weight powdered elastomer crumb and from 9 to 20%, preferably about 14%, of binder.

24. A method according to any preceding claim in which the binder is a polyurethane MDI binder.

25. A method according to claim 24 in which the binder is selected from the group consisting of 4,4-methylene di-p-phenylene isocyanate (MDI) polyurethane one- and two-component adhesives.

26. A method according to claim 24 in which the binder is a solvent free one component polyurethane adhesive.

27. A method according to any one of claims 1 to 23 in which the binder is a hot melt binder.

28. A method according to any preceding claim in which the crumb/binder mixture includes powdered additives selected from the group consisting of anti-microbial additives, anti-flammability additives, pigments, such as iron oxide, and anti-static additives, such as carbon fibres.

29. A method according to any preceding claim, characterised in that the textile surface comprises a knitted, woven or non-woven textile.

30. A method according to any preceding claim, wherein an edging strip is bonded to the elastomer backing adjacent at least one edge thereof.

31. A method according to claim 30, wherein the textile surface element partially overlaps and is bonded to the edging strip.